

In the Drawings

A correction to Fig. 7 has been made to include missing reference number 714. Support for this reference is provided by the description paragraph [0172], which states, "In an embodiment, the assist source 713 produces a beam of energized ions 714." Attached hereto is a red-lined drawing of Fig. 7 showing the correction made, and a REPLACEMENT SHEET corrected FORMAL drawing sheet 9 of 46 (Figs. 7 and 8).

REMARKS

Applicant has carefully reviewed and considered the Non-Final Office Action mailed June 3, 2005, and the references cited therewith. The specification paragraph [002] is amended to correct the title of a related patent application. A drawing has been amended (Fig. 7) to include a missing label. Claims 32-34 and 38-41 have been amended. Claims 1-20 and 42-54 are cancelled. No new matter is added. Claims 21-41 and 55-62 are pending, and consideration of these claims is requested. Please charge any required fees to deposit account 502931.

A set of formal drawings was submitted on with the filing of the application on March 22, 2004, and appears in PAIR. Applicant respectfully requests an indication of acceptance of the formal drawings in the next office action.

Election/Restrictions

Re. June 3, 2005 Office Action § 1: The Examiner stated that claim 42 does not positively recite a battery and capacitor combination, and as such, does not constitute a linking claim linking the claimed inventions. The Applicant respectfully traverses. The Examiner made the Election/Restriction requirement final. The Applicant respectfully disagrees with the Examiner's conclusion that claim 42 does not constitute a linking claim. In order to expedite prosecution of the remaining claims in the application, the Applicant has cancelled previously withdrawn claims 1-12 and 42-54, but reserves the right to file these claims in a divisional application.

Information Disclosure Statement

Re. June 3, 2005 Office Action § 2: The Applicant is including herewith a Supplemental IDS. Two Doble et al. publications are included with this Supplemental IDS, with the publication dates provided. Applicant respectfully requests that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form SB/08 (Substitute for Form 1449) be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the SB/08 form, initialed as being

considered by the Examiner, be returned to the Applicant with the next official communication.

Claim Suggestions

Re. June 3, 2005 Office Action § 3: The Examiner advised that claims 32 and 33 are substantially duplicative. Applicant respectfully disagrees. Claim 32 includes, “depositing a cathode-conductor of the battery on the insulating layer” (emphasis added). While claim 33 includes, “depositing a cathode-conductor of the battery on a face of the integrated circuit opposite the insulating layer” (emphasis added). The difference is significantly more than a slight difference in wording. Applicant respectfully requests reconsideration of this suggestion.

The Examiner further noted that in claim 32, “an insulating layer” was defined twice. Claim 32 has been amended to remove duplicative recitations.

Claim Rejections – 35 USC § 102

Re. June 3, 2005 Office Action §§ 4-5: Claims 21-29, 31, 35, and 60 were rejected by the Examiner under 35 U.S.C. 102(b) as being anticipated by THOMAS et al. (US Patent 5,849,426). Applicant respectfully traverses.

THOMAS describes a hybrid energy storage system where, “The battery cell or cells are disposed in a battery pack, as shown hereinbelow in FIG. 3.” (See THOMAS column 2, lines 35-36) In THOMAS, the battery is formed outside of the substrate, and the completed battery later disposed or placed in the housing.

Disposed in the housing base is the first energy source, 66. The first energy source 66 is one or more batteries of the type described hereinabove. As illustrated herein, the first energy source comprises five discrete cells 68, 70, 72, 74, 76, electrically connected in series and packaged in shrink wrap, in a manner well know in the art. (See THOMAS column 4, lines 35-41)

The Thomas figure 3 shows a completed battery 66 separate from housing 54 and from housing 52. Thomas does not deposit thin films on the housing to form its battery.

In THOMAS, the second energy storage device, such as a capacitor, is also formed outside of the substrate, and disposed or placed in the housing. In contrast, the present invention as described in claims 21-29, 31, 35, and 60, deposits a series of thin-film layers on a substrate, once deposited, form a combined battery and device apparatus. THOMAS does not describe or

suggest depositing a series of thin-film layers directly on the housing or substrate forming a battery and energy storage device.

In contrast, the present invention of claim 21 recites “providing a substrate; and depositing a plurality of thin-film layers on the substrate, the plurality of layers forming a solid-state battery and a capacitor electrically connected to one another, the battery including a cathode layer; an anode layer, and an electrolyte layer located between and electrically isolating the anode layer from the cathode layer, wherein the anode or the cathode or both include an intercalation material.”

Accordingly, reconsideration and withdrawal of the rejection with regard to these claims is respectfully requested.

Claim Rejections – 35 USC § 103

Re. June 3, 2005 Office Action §§ 6-7: Claims 36 and 55 were rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over THOMAS et al. (US Patent 5,849,426). Applicant respectfully traverses.

The Examiner notes that, “Portable electronic devices are commonly housed in plastic cases, and as such, the selection of such a material for use in Thomas et al. would be obvious to a skilled artisan.” Again, THOMAS does not describe or suggest depositing a series of thin-film layers directly on the housing or substrate forming a battery and energy storage device, whether the substrate or housing has a high melting temperature or low melting temperature. Rather Thomas places an already-completed battery in it plastic casing.

In contrast, the present claimed invention recites “providing a substrate; and depositing a plurality of thin-film layers on the substrate, the plurality of layers forming a solid-state battery and a capacitor electrically connected to one another, the battery including a cathode layer; an anode layer, and an electrolyte layer located between and electrically isolating the anode layer from the cathode layer, wherein the anode or the cathode or both include an intercalation material, wherein the substrate comprises a polymer having a melting point substantially below 700 degrees centigrade.”

Accordingly, reconsideration and withdrawal of the rejection with regard to these claims

is respectfully requested.

Re. June 3, 2005 Office Action § 8: Claims 21-23, 28-30, 35, 37, and 55-62 were rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over MEITAV et al. (US Patent 6,576,365). Applicant respectfully traverses.

The Examiner notes that, “The reference does not expressly teach that a battery and a capacitor are located next to each other either in a vertical or horizontal direction as recited in the instant claims.”

In one exemplary embodiment, there may be provided a multi-cell capacitor that comprises two elements of conductive polymer current collectors coated with a metallic film and adhered to a plastic perforated isolating frame. Such a combination forms a current collector assembly. Within the openings formed in each of the perforated isolating frames is present a high surface area carbon-based electrode material to form capacitive electrode plates. Where a current collector longitudinally electrically connects two isoplanar cells in series, the current collector is referred to as a common current collector. Where a current collector connects only a single cell to some external circuitry or contacts the end cell of a stack of cells, thereby connecting the stack to some external circuitry, the current collector is referred to as a terminal current collector. Such common and terminal current collectors are used externally to the stack or stacks of cells. (See MEITAV column 3, line 64, through column 4, line 13)

MEITAV describes laminations of films and metallic layer adhesively attached. MEITAV, like THOMAS, does not describe or suggest depositing a series of thin-film layers directly on the housing or substrate forming a battery and energy storage device, but instead forms a battery in stacks. MEITAV describes using perforated isolating frames to support the structure, in contrast to the present invention using thin-film layers on a substrate. (See MEITAV Abstract).

In contrast, the present invention of claim 21 recites “providing a substrate; and depositing a plurality of thin-film layers on the substrate, the plurality of layers forming a solid-state battery and a capacitor electrically connected to one another, the battery including a cathode layer; an anode layer, and an electrolyte layer located between and electrically isolating the anode layer from the cathode layer, wherein the anode or the cathode or both include an intercalation material.”

Accordingly, reconsideration and withdrawal of the rejection with regard to these claims is respectfully requested.

Double Patenting

Re. June 3, 2005 Office Action §§ 9-10: A timely filed terminal disclaimer to obviate a double patenting rejection over a prior patent, in compliance with 37 CFR 1.321(c), is included herewith. Accordingly, reconsideration and withdrawal of the rejection with regard to these claims is respectfully requested.

Allowable Subject Matter

Re. June 3, 2005 Office Action's §§ 11-12: The Examiner states that claims 32-34 and 38-41 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if the obvious-type double patenting rejection was obviated. Claims 32-34 and 38-41 are amended and rewritten in independent form including all of the limitations of the base claim and any intervening claims, and a timely filed terminal disclaimer to obviate a double patenting rejection over a prior patent, in compliance with 37 CFR 1.321(c), is included herewith.

Accordingly, reconsideration and allowance of these claims is respectfully requested.

Serial No.: 10/807,214

Filed: March 22, 2004

Title: METHOD AND APPARATUS FOR INTEGRATED BATTERY-CAPACITOR DEVICES

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (952-278-3501) to facilitate prosecution of this application.

If not otherwise provided herewith, please consider this a request for an extension of time for a sufficient number of months to enter these papers. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 502931.

Respectfully submitted,

MARK L. JENSON, ET AL.

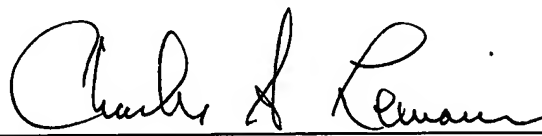
By their Representatives,

LEMAIRE PATENT LAW FIRM, PLLC
P.O. BOX 11358
ST. PAUL, MN 55111
TELEPHONE: 952-278-3500

Date

6 Sept 2005

By



Charles A. Lemaire
Reg. No. 36,198

"Express Mail" mailing label number: EV 584 017 205 US

Date of Deposit: September 6, 2005

This paper or fee is being deposited on the date indicated above with the United States Postal Service pursuant to 37 CFR 1.10, and is addressed to:

Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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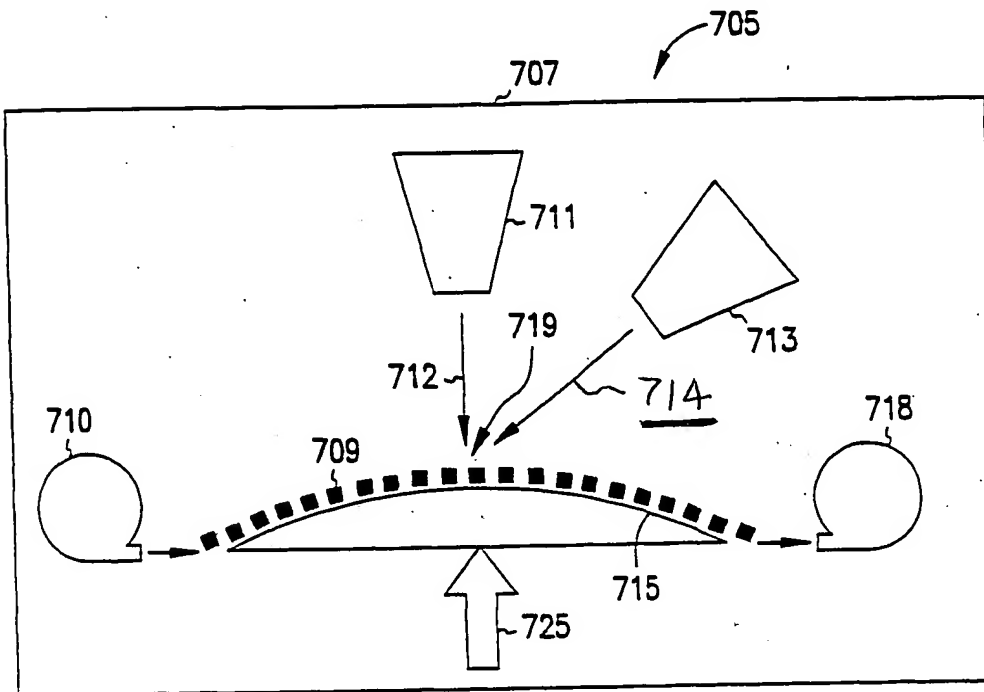


FIG. 7

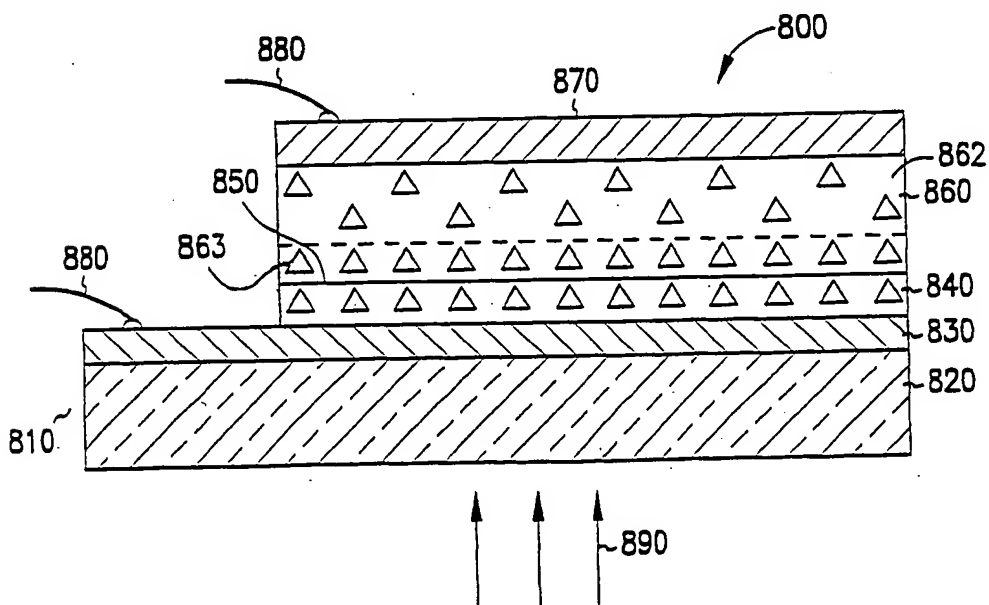


FIG. 8